tt ?   OIPE

RAW SEQUENCE LISTING   DATE: 01/15/2002
PATENT APPLICATION: US/10/023,673   TIME: 18:10:21

Input Set : **A:\seq listing.txt**
Output Set: **N:\CRF3\01152002\J023673.raw**

ENTERED

```
    4  <110> APPLICANT: Chen, Hong
    5         Silos-Santiago, Immaculada
    7  <120> TITLE OF INVENTION: NT69, A Novel Nucleoside Transporter
    8         Family Member And Uses Therefor
   12  <130> FILE REFERENCE: MPI2000-433CP1(M)
C--> 14 <140> CURRENT APPLICATION NUMBER: US/10/023,673
C--> 14 <141> CURRENT FILING DATE: 2001-12-17
   14  <150> PRIOR APPLICATION NUMBER: 09/712797
   15  <151> PRIOR FILING DATE: 2000-11-14
   17  <160> NUMBER OF SEQ ID NOS: 3
   19  <170> SOFTWARE: FastSEQ for Windows Version 4.0
   21  <210> SEQ ID NO: 1
   22  <211> LENGTH: 2625
   23  <212> TYPE: DNA
   24  <213> ORGANISM: Human
   26  <220> FEATURE:
   27  <221> NAME/KEY: 3'UTR
   28  <222> LOCATION: (1)...(52)
   30  <221> NAME/KEY: CDS
   31  <222> LOCATION: (53)...(1477)
   33  <221> NAME/KEY: 5'UTR
   34  <222> LOCATION: (1478)...(2625)
   36  <400> SEQUENCE: 1
   37  gtcgacccac gcgtccgctt agaaggagca caggaaagtc ccagaggctg cc atg ggc  58
   38                                                              Met Gly
   39                                                               1
   41  tcc gtg ggg agc cag cgc ctt gag gag ccc agc gtg gca ggc aca cca  106
   42  Ser Val Gly Ser Gln Arg Leu Glu Glu Pro Ser Val Ala Gly Thr Pro
   43          5                  10                  15
   45  gac ccg ggc gta gtg atg agc ttc ctg ctg cca tac aac agc ttc atc  154
   46  Asp Pro Gly Val Val Met Ser Phe Leu Leu Pro Tyr Asn Ser Phe Ile
   47          20                  25                  30
   49  acg gac gtg gac tac ctg cat cac aag tac cca ggg acc tcc atc gtg  202
   50  Thr Asp Val Asp Tyr Leu His His Lys Tyr Pro Gly Thr Ser Ile Val
   51  35                  40                  45                  50
   53  ttt gac atg agc ctc acc tac atc ttg gtg gca ctg gca gct gtc ctc  250
   54  Phe Asp Met Ser Leu Thr Tyr Ile Leu Val Ala Leu Ala Ala Val Leu
   55                  55                  60                  65
   57  ctg aac aac gtc ctg gtg gag aga ctg acc ctg cac acc agg atc acc  298
   58  Leu Asn Asn Val Leu Val Glu Arg Leu Thr Leu His Thr Arg Ile Thr
   59                  70                  75                  80
   61  gca ggc tac ctc tta gcc ttg ggc cct ctc ctt ttt atc agc atc tgc  346
   62  Ala Gly Tyr Leu Leu Ala Leu Gly Pro Leu Leu Phe Ile Ser Ile Cys
   63          85                  90                  95
   65  gac gtg tgg ctg cag ctc ttc tct cgg gac cag gcc tac gcc atc aac  394
   66  Asp Val Trp Leu Gln Leu Phe Ser Arg Asp Gln Ala Tyr Ala Ile Asn
   67          100                 105                 110
```

RAW SEQUENCE LISTING   DATE: 01/15/2002
PATENT APPLICATION: US/10/023,673   TIME: 18 10:21

Input Set : **A:\seq listing.txt**
Output Set: **N:\CRF3\01152002\J023673.raw**

```
69  ctg gcc gct gtg ggc acc gtg gcc ttc ggc tgc aca gtg cag caa tcc   442
70  Leu Ala Ala Val Gly Thr Val Ala Phe Gly Cys Thr Val Gln Gln Ser
71  115                 120                 125                 130
73  agc ttc tac ggg tac acg gtg atg ctg ccc aag cgg tac acg cag ggg   490
74  Ser Phe Tyr Gly Tyr Thr Gly Met Leu Pro Lys Arg Tyr Thr Gln Gly
75                      135                 140                 145
77  gtg atg acc ggg gag agc acg gcg ggc gtg atg atc tct ctg agc cgc   538
78  Val Met Thr Gly Glu Ser Thr Ala Gly Val Met Ile Ser Leu Ser Arg
79                  150                 155                 160
81  atc ctc acg aag ctg ctg ctg ccc gac gag cgc gcc agc acg ctc atc   586
82  Ile Leu Thr Lys Leu Leu Leu Pro Asp Glu Arg Ala Ser Thr Leu Ile
83              165                 170                 175
85  ttc ttc ctg gtg tcg gtg gcg ctg gag ctg ctg tgt ttc ctg ctg cac   634
86  Phe Phe Leu Val Ser Val Ala Leu Glu Leu Leu Cys Phe Leu Leu His
87      180                 185                 190
89  ctg tta gtg cgg cgc agc cgc ttc gtg ctc ttc tat acc aca cgg ccg   682
90  Leu Leu Val Arg Arg Ser Arg Phe Val Leu Phe Tyr Thr Thr Arg Pro
91  195                 200                 205                 210
93  cgt gac agc cac cgg ggc agg cca ggc ctg ggc agg ggc tat ggc tac   730
94  Arg Asp Ser His Arg Gly Arg Pro Gly Leu Gly Arg Gly Tyr Gly Tyr
95                      215                 220                 225
97  cgc gtg cac cac gac gtt gtc gcc ggg gac gtc cac ttc gag cac cca   778
98  Arg Val His His Asp Val Val Ala Gly Asp Val His Phe Glu His Pro
99                  230                 235                 240
101 gcc ccg gcc ctg gcc ccc aac gag tcc cca aag gac agc cca gcc cac   826
102 Ala Pro Ala Leu Ala Pro Asn Glu Ser Pro Lys Asp Ser Pro Ala His
103             245                 250                 255
105 gag gtg acc ggc agc ggc ggg gcc tac atg cgc ttt gac gtg ccg cgg   874
106 Glu Val Thr Gly Ser Gly Gly Ala Tyr Met Arg Phe Asp Val Pro Arg
107     260                 265                 270
109 cca agg gtc cag cgc agc tgg ccc acc ttc aga gcc ctg tta ctg cac   922
110 Pro Arg Val Gln Arg Ser Trp Pro Thr Phe Arg Ala Leu Leu Leu His
111 275                 280                 285                 290
113 cgc tac gtg gtg gcg cgg gtg atc tgg gcc gac atg ctc tcc atc gcc   970
114 Arg Tyr Val Val Ala Arg Val Ile Trp Ala Asp Met Leu Ser Ile Ala
115                     295                 300                 305
117 gtg acc tac ttc atc acg ctg tgc ctg ttc ccc ggc ctc gag tct gag   1018
118 Val Thr Tyr Phe Ile Thr Leu Cys Leu Phe Pro Gly Leu Glu Ser Glu
119                 310                 315                 320
121 atc cgc cac tgc atc ctg ggc gag tgg ctg ccc atc ctc atc atg gct   1066
122 Ile Arg His Cys Ile Leu Gly Glu Trp Leu Pro Ile Leu Ile Met Ala
123             325                 330                 335
125 gtg ttc aac ctg tca gac ttc gtg ggc aag atc ctg gca gcc ctg ccc   1114
126 Val Phe Asn Leu Ser Asp Phe Val Gly Lys Ile Leu Ala Ala Leu Pro
127     340                 345                 350
129 gtg gac tgg cgg ggc acc cac ctg ctg gcc tgc tcc tgc ctg cgt gtg   1162
130 Val Asp Trp Arg Gly Thr His Leu Leu Ala Cys Ser Cys Leu Arg Val
131 355                 360                 365                 370
133 gtc ttc atc ccc ctc ttc atc ctg tgc gtc tac ccc agc ggc atg ccc   1210
```

```
RAW SEQUENCE LISTING                    DATE: 01/15/2002
PATENT APPLICATION:  US/10/023,673      TIME: 18:10:21

        Input Set : A:\seq listing.txt
        Output Set: N:\CRF3\01152002\J023673.raw


134 Val Phe Ile Pro Leu Phe Ile Leu Cys Val Tyr Pro Ser Gly Met Pro
135                 375                 380                 385
137 gcc ctc cgt cac ccc gcc tgg ccc tgc atc ttc tca ctg ctc atg ggc    1258
138 Ala Leu Arg His Pro Ala Trp Pro Cys Ile Phe Ser Leu Leu Met Gly
139                 390                 395                 400
141 atc agc aac ggc tac ttc ggc agc gtg ccc atg atc ctg gcg gca ggc    1306
142 Ile Ser Asn Gly Tyr Phe Gly Ser Val Pro Met Ile Leu Ala Ala Gly
143                 405                 410                 415
145 aaa gtg agc ccc aag cag cgg gag ctg gca ggg aac acc atg acc gtg    1354
146 Lys Val Ser Pro Lys Gln Arg Glu Leu Ala Gly Asn Thr Met Thr Val
147     420                 425                 430
149 tcc tac atg tca ggg ctg acg ctg ggg tcc gcc gtg gcc tac tgc acc    1402
150 Ser Tyr Met Ser Gly Leu Thr Leu Gly Ser Ala Val Ala Tyr Cys Thr
151 435                 440                 445                 450
153 tac agc ctc acc cgc gac gct cac ggc agc tgc ctg cac gcc tcc acc    1450
154 Tyr Ser Leu Thr Arg Asp Ala His Gly Ser Cys Leu His Ala Ser Thr
155                 455                 460                 465
157 gcc aat ggt tcc atc ctc gca ggc ctc tgagccagcc ccgcccactg         1497
158 Ala Asn Gly Ser Ile Leu Ala Gly Leu
159                 470                 475
161 ccagggacgc cgagggcctg accaggggcc ccgaggcctg agggcccctc ccctgtcccc 1557
162 acctcagtgc ctgcggggcc ctgagcctcc ccctgtgcca gcagccccac tccctcaggg 1617
163 tccagccatg ccccaccctg gactgaagtt ctgcaaagtc ctccgaggac cggaacacgt 1677
164 ttctgcgacc cggggctctg gccagcactg tgttctgcgt ttggtctcat acctgcgtct 1737
165 accttccatc tgtgtccagc ggccccggct ccagcccagc cagcactctg cagggtcaca 1797
166 cgcaccgtgt ccccacccag gacagcagac accgccaga gtgtgcgcgc ccagtgactg 1857
167 cacccggcc ctcatcaccc acggcactg atcggggcac cgcctggccc agcctccacc 1917
168 agggacccct cctcatgaac tctggagccc tgagaggaga gggcagccc cccaccttgt 1977
169 caccctcagg gcttcccctt ctgtcctcat tcttagagac tgcttctccc aaacataacg 2037
170 cgttagccat gaaggagtcg gagccctggg tccgaatgga cccgcctgcg gtctgcatca 2097
171 gcctctggga aaccacagca gtgatgccag ctgggcacgt caggacctcc ccacacaccc 2157
172 acacgatgcc acaggtcagg gggctgtgcc tgactaggga gccctccat tgccttcctg 2217
173 gcccgggata gaagagggga ggtaagtctg ggggctacga agccggcccc ccacaccctg 2277
174 gctgaagtca gcttgaccta ggtcttgacc ctcatccagc aagggactcg acagacccaa 2337
175 gggtccctgg aacgtaggga ggggctgggg gtcactccag cccgggcctc ccagaacacc 2397
176 aggcccgtgt gggtggcacc ctgaggtcag gggatcctaa gggtgtcctt ccagagacgg 2457
177 tgtttccagg gggaggaccg cccccgcttc cagatccccg gccccggctg tgactgccct 2517
178 gtttcacccc tgctgtgtcc catcccccgt ctgtccacta actgtaccgc accggccatt 2577
179 aaaagatgaa ggcagaccgc tgcaaaaaaa aaaaaaaagg gcggccgc              2625
181 <210> SEQ ID NO: 2
182 <211> LENGTH: 475
183 <212> TYPE: PRT
184 <213> ORGANISM: Human
186 <400> SEQUENCE: 2
187 Met Gly Ser Val Gly Ser Gln Arg Leu Glu Glu Pro Ser Val Ala Gly
188 1                   5                   10                  15
189 Thr Pro Asp Pro Gly Val Val Met Ser Phe Leu Leu Pro Tyr Asn Ser
190                 20                  25                  30
191 Phe Ile Thr Asp Val Asp Tyr Leu His His Lys Tyr Pro Gly Thr Ser
```

RAW SEQUENCE LISTING   DATE: 01/15/2002
PATENT APPLICATION: US/10/023,673   TIME: 18:10:21

Input Set : A:\seq listing.txt
Output Set: N:\CRF3\01152002\J023673.raw

```
192          35                    40                   45
193 Ile Val Phe Asp Met Ser Leu Thr Tyr Ile Leu Val Ala Leu Ala Ala
194     50                    55                   60
195 Val Leu Leu Asn Asn Val Leu Val Glu Arg Leu Thr Leu His Thr Arg
196 65                    70                   75                   80
197 Ile Thr Ala Gly Tyr Leu Leu Ala Leu Gly Pro Leu Leu Phe Ile Ser
198                   85                   90                   95
199 Ile Cys Asp Val Trp Leu Gln Leu Phe Ser Arg Asp Gln Ala Tyr Ala
200                   100                  105                  110
201 Ile Asn Leu Ala Ala Val Gly Thr Val Ala Phe Gly Cys Thr Val Gln
202             115                  120                  125
203 Gln Ser Ser Phe Tyr Gly Tyr Thr Gly Met Leu Pro Lys Arg Tyr Thr
204         130                  135                  140
205 Gln Gly Val Met Thr Gly Glu Ser Thr Ala Gly Val Met Ile Ser Leu
206 145                  150                  155                  160
207 Ser Arg Ile Leu Thr Lys Leu Leu Leu Pro Asp Glu Arg Ala Ser Thr
208                   165                  170                  175
209 Leu Ile Phe Phe Leu Val Ser Val Ala Leu Glu Leu Leu Cys Phe Leu
210                   180                  185                  190
211 Leu His Leu Leu Val Arg Arg Ser Arg Phe Val Leu Phe Tyr Thr Thr
212         195                  200                  205
213 Arg Pro Arg Asp Ser His Arg Gly Arg Pro Gly Leu Gly Arg Gly Tyr
214     210                  215                  220
215 Gly Tyr Arg Val His His Asp Val Val Ala Gly Asp Val His Phe Glu
216 225                  230                  235                  240
217 His Pro Ala Pro Ala Leu Ala Pro Asn Glu Ser Pro Lys Asp Ser Pro
218                   245                  250                  255
219 Ala His Glu Val Thr Gly Ser Gly Gly Ala Tyr Met Arg Phe Asp Val
220             260                  265                  270
221 Pro Arg Pro Arg Val Gln Arg Ser Trp Pro Thr Phe Arg Ala Leu Leu
222         275                  280                  285
223 Leu His Arg Tyr Val Val Ala Arg Val Ile Trp Ala Asp Met Leu Ser
224     290                  295                  300
225 Ile Ala Val Thr Tyr Phe Ile Thr Leu Cys Leu Phe Pro Gly Leu Glu
226 305                  310                  315                  320
227 Ser Glu Ile Arg His Cys Ile Leu Gly Glu Trp Leu Pro Ile Leu Ile
228             325                  330                  335
229 Met Ala Val Phe Asn Leu Ser Asp Phe Val Gly Lys Ile Leu Ala Ala
230         340                  345                  350
231 Leu Pro Val Asp Trp Arg Gly Thr His Leu Leu Ala Cys Ser Cys Leu
232     355                  360                  365
233 Arg Val Val Phe Ile Pro Leu Phe Ile Leu Cys Val Tyr Pro Ser Gly
234     370                  375                  380
235 Met Pro Ala Leu Arg His Pro Ala Trp Pro Cys Ile Phe Ser Leu Leu
236 385                  390                  395                  400
237 Met Gly Ile Ser Asn Gly Tyr Phe Gly Ser Val Pro Met Ile Leu Ala
238             405                  410                  415
239 Ala Gly Lys Val Ser Pro Lys Gln Arg Glu Leu Ala Gly Asn Thr Met
240             420                  425                  430
```

RAW SEQUENCE LISTING   DATE: 01/15/2002
PATENT APPLICATION: US/10/023,673 TIME: 18:10:21

Input Set : **A:\seq listing.txt**
Output Set: **N:\CRF3\01152002\J023673.raw**

```
241 Thr Val Ser Tyr Met Ser Gly Leu Thr Leu Gly Ser Ala Val Ala Tyr
242         435             440             445
243 Cys Thr Tyr Ser Leu Thr Arg Asp Ala His Gly Ser Cys Leu His Ala
244     450             455             460
245 Ser Thr Ala Asn Gly Ser Ile Leu Ala Gly Leu
246 465             470             475
249 <210> SEQ ID NO: 3
250 <211> LENGTH: 1428
251 <212> TYPE: DNA
252 <213> ORGANISM: Human
254 <220> FEATURE:
255 <221> NAME/KEY: CDS
256 <222> LOCATION: (1)...(1428)
258 <400> SEQUENCE: 3
259 atg ggc tcc gtg ggg agc cag cgc ctt gag gag ccc agc gtg gca ggc   48
260 Met Gly Ser Val Gly Ser Gln Arg Leu Glu Glu Pro Ser Val Ala Gly
261 1               5               10              15
263 aca cca gac ccg ggc gta gtg atg agc ttc ctg ctg cca tac aac agc   96
264 Thr Pro Asp Pro Gly Val Val Met Ser Phe Leu Leu Pro Tyr Asn Ser
265             20              25              30
267 ttc atc acg gac gtg gac tac ctg cat cac aag tac cca ggg acc tcc  144
268 Phe Ile Thr Asp Val Asp Tyr Leu His His Lys Tyr Pro Gly Thr Ser
269         35              40              45
271 atc gtg ttt gac atg agc ctc acc tac atc ttg gtg gca ctg gca gct  192
272 Ile Val Phe Asp Met Ser Leu Thr Tyr Ile Leu Val Ala Leu Ala Ala
273     50              55              60
275 gtc ctc ctg aac aac gtc ctg gtg gag aga ctg acc ctg cac acc agg  240
276 Val Leu Leu Asn Asn Val Leu Val Glu Arg Leu Thr Leu His Thr Arg
277 65              70              75              80
279 atc acc gca ggc tac ctc tta gcc ttg ggc cct ctc ctt ttt atc agc  288
280 Ile Thr Ala Gly Tyr Leu Leu Ala Leu Gly Pro Leu Leu Phe Ile Ser
281             85              90              95
283 atc tgc gac gtg tgg ctg cag ctc ttc tct cgg gac cag gcc tac gcc  336
284 Ile Cys Asp Val Trp Leu Gln Leu Phe Ser Arg Asp Gln Ala Tyr Ala
285         100             105             110
287 atc aac ctg gcc gct gtg ggc acc gtg gcc ttc ggc tgc aca gtg cag  384
288 Ile Asn Leu Ala Ala Val Gly Thr Val Ala Phe Gly Cys Thr Val Gln
289     115             120             125
291 caa tcc agc ttc tac ggg tac acg ggg atg ctg ccc aag cgg tac acg  432
292 Gln Ser Ser Phe Tyr Gly Tyr Thr Gly Met Leu Pro Lys Arg Tyr Thr
293     130             135             140
295 cag ggg gtg atg acc ggg gag agc acg gcg ggc gtg atg atc tct ctg  480
296 Gln Gly Val Met Thr Gly Glu Ser Thr Ala Gly Val Met Ile Ser Leu
297 145             150             155             160
299 agc cgc atc ctc acg aag ctg ctg ctg ccc gac gag cgc gcc agc acg  528
300 Ser Arg Ile Leu Thr Lys Leu Leu Leu Pro Asp Glu Arg Ala Ser Thr
301             165             170             175
303 ctc atc ttc ttc ctg gtg tcg gtg gcg ctg gag ctg ctg tgt ttc ctg  576
304 Leu Ile Phe Phe Leu Val Ser Val Ala Leu Glu Leu Leu Cys Phe Leu
```

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/023,673

DATE: 01/15/2002
TIME: 18:19:22

Input Set : **A:\seq listing.txt**
Output Set: **N:\CRF3\01152002\J023673.raw**

L:14 M:270 C: Current Application Number differs. Replaced Current Application No
L:14 M:271 C: Current Filing Date differs. Replaced Current Filing Date